provide space for disks 10, 20 to clear brushes 15, 16. The outer bearing collars 18 hold disks 10, 20 in place, and conventional spacers such as spacer 19 may be used to achieve the proper clearances. Spacer 19 abuts box frame 1 and pulley 5. Legs 27 support frame 1. Note that belt 21 is crossed in order to counter-rotate disks 10, 20 upon operation of hand crank 4.--

IN THE DRAWINGS

A Drawing Change Authorization Request is included herewith to change the reference numeral 20 in label of current FIG. 12A to read "FIG. 12" as required by the Examiner.

REMARKS

This amendment is being submitted in response to the Office Action dated 19 December 2002. Reconsideration and allowance of this application are respectfully requested. Claims 1-5 are herein amended, and claims 1-5 are pending in the application.

The Examiner objected to the drawings under 37 C.F.R. 1.84(p)(4) because reference numerals 20 and 35 were double-used, and a corresponding objection to the specification was noted. A drawing change authorization request is submitted herewith to change the support leg references in FIG. 4 from "20" to –27–, and the specification is amended herein to reflect this change. The Examiner also cited a dual reference to no. 35 but this stems from an incorrect reference in the specification. Accordingly, the specification has been amended to correct the mistake.

The Examiner rejected claims 1-5 under 35 USC 101 as being inoperative. Similarly, claims 1-5 were rejected under 35 USC 112, first paragraph, as failing to enable one skilled in the art to make and/or use the invention. According to the Examiner, the claims and description assume that a grounded electrode will induce a positive potential on an opposing electrode. The Examiner states that "a negative electrode will induce a positive potential in an opposing electrode, but a negative [sic, neutral?] electrode will produce no charge." According to the Examiner, the claims and the specification therefore violate the laws of conservation of energy. However, the present invention is simply a more efficient Wimshurst-type electrostatic generator which is a long-established generator. The claims do not require that a neutral electrode will induce a positive (or negative) potential in an opposing electrode. Nor does the specification, which states "opposite charge plates 30, 40 pass and a net charge on one will induce an opposite charge in the other, resulting in a net gain in electrical energy (a conversion of mechanical to electrical energy)." The Applicant is not completely sure where the Examiner construed the requirement that a grounded electrode will induce a positive potential on an opposing electrode, but it appears that this reasoning is misplaced.

With specific regard to FIG. 4, the Examiner contends that it will not operate because both discs 10, 20 are mounted on the same shaft. This fact does not render the illustrated device inoperative. Since the discs 10, 20 are counter-rotating, they indeed can be mounted on the same shaft and still be operative. The Examiner also states "Additionally, the bearings are positioned around the shaft but unsupported by any stationary structural support, therefore they will rotate with the shaft." Incorrect. The specification clearly states that these are conventional bearing

collars which are used as needed to rotatably support shaft 3 and provide bearing contact against the surfaces of disks 10, 20. Contrary to the Examiner's assertion, note the stationary wall 24 which provides support for the bearing collar 18. The Examiner also questions the operation of the crossed belt 21 and asserts that it will prevent rotation of disk 10 relative to disk 20 because pulleys 7 and 8 will be driven in opposite directions. However, that is as intended. Since the specification clearly explains that the discs 10, 20 are counter-rotating, they indeed should be driven in opposite directions. The Examiner also notes that discs 10 and 20 cannot induce charge because there is a support 24 in between and the discs are not in close proximity. However, the "support" is merely a partition 24 that passes between disks 10 and 20, and one skilled in the art would unquestionably understand how to erect a partition that does not interrupt the electromagnetic fields. The fact that the discs are slightly separated from each other in FIG. 4 is merely for illustration. Applicant believes that it is clear from the description that the discs 10, 20 induce a charge build up between themselves, and must therefore be in proximity. A dimensionally correct drawing with thin sandwiched plates 10, 20 would offer no perspective and would only confuse the issue. Again, one skilled in the art would (with a view toward an existing Wimshurst generator) know exactly what is contemplated.

In light of the above, the Examiner has required a working model of the invention to establish the operability of the device under 37 CFR 1.92. However, 37 CFR 1.92 no longer gives the Examiner authority to require a prototype because the provision was removed and reserved, 62 FR 53131, Oct. 10, 1997, effective Dec. 1, 1997. If the Examiner wishes, Applicant is willing to host the Examiner at Applicant's residence in Pelham, NC for the purpose of viewing and testing the prototype (which is large, heavy and generally not portable).

Alternatively, the Examiner is welcome to call Applicant for a walk-through of the device. Indeed, as this would seem to be a better solution Applicant will initiate a telephone interview and will call in one week to schedule it.

* * * * *

In view of the above amendments and remarks, it is believed that this application is now in condition for further examination (consideration in light of prior art), and further consideration is respectfully requested.

Respectfully submitted,

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APPENDIX A: REDLINED SPECIFICATION

Beginning at page 2, line 21, and running to page 4, line 4, redlined version:

--Referring now to FIG. 1, a prior art Wimshurst generator is shown with the contra-rotating disks 10, 20 presented as concentric and a plurality of foil sectors 12, 22 spaced evenly there about. It is to be understood that in this prior art embodiment the disks are of equal diameter with an equal number of evenly spaced conductive foil sectors 12, 22. Two neutralizing bars 31, 34 with end contact brushes 32, 33 and 35, 36, respectively, ground and neutralize charged foil sectors 12, 22 as they come into contact. In operation, when mechanical rotational energy is applied to the shaft from a hand crank, an electric motor, a flywheel, or any other source, two identical functions take place on each contra-rotating disk 10, 20, one producing a positive electrostatic charge and one producing a negative electrostatic charge. A region of positively charged foil sectors on one disk is brought near a region of neutral foil sectors on the other disk. The positive foil sectors induce a negative charge in the nearby neutral foil sectors on the other disk. The positive charged foil sectors pass under the next adjacent contact brush, e.g, brush 35 of the arm of neutralizing bar 34 which discharges the positive surface electrostatic charge. The formerly neutral foil sectors 12 are now negatively charged, and as they move in the opposite direction from the positively charged foil sectors on the other disk and approach neutral foil sectors. Now these negatively charged foil sectors 12 act as the charged surface to induce a positive electrostatic charge in the neutral foil sectors 22 on the first disk 20 when they touch a contact brush of the second neutralizing bar [35] 34. As the disks turn, the neutralizing bars 34, [35] 31 become energy producing systems, one always producing a positive electrostatic charge and one producing a negative electrostatic charge. Given the above-described configuration, the rotating foil sectors on both disks 10, 20 will reach a point where they both carry a positive electrostatic charge in one segment. Likewise, the opposing foil sectors on both disks will both carry a negative electrostatic charge in an opposite segment. Collectors 41, 44 with end contact brushes 42, 43, 45, 46 are located in these two segments collect the respective charges. The result is a high-voltage electrostatic differential. The charges derived from collectors 41, 44 can be stored in capacitors for discharge of high energy, and in traditional systems the Leyden jar is used as a capacitor that is well known to those of ordinary skill in the relevant art.--

Beginning at page 10, line 15, and running to page 11, line 8...redlined version.

--FIG. 4 is a side perspective view illustrating a completed mechanical assembly for implementing the above described generator of FIG. 2. Horizontal dimensions are enlarged for illustrative purposes. The assembly includes a box frame container 1. The box frame container 1 supports two rotatable shafts 2, 3. A hand crank 4 turns shaft 3, and a large drive wheel 5 turns shaft 2. Drive pulleys 6, 7 and 8 are mounted on shaft 2. The two disks 10, 20 containing respective charge plates 12 (not shown) and 22 are mounted on shaft 3. Charge plates 12, 22 are evenly disposed around both disk's 10 and 20, and face each other. A central partition 24 passes between disks 10 and 20. This partition 24 is formed with a hole 13 that encircles shaft 3. A conductive metallic ring 14 encircles the inner edge of the hole 13. Conventional bearing collars 18 are used as desired to rotatably support shaft 3 and to roll against the surfaces of disks 10, 20. Preferably, three bearing collars 18 are used, one between the two disks 10, 20 and the others on the opposite sides of the disks 10, 20. The middle bearing collar 18 should be thick enough to provide space for disks 10, 20 to clear brushes 15, 16. The outer bearing collars 18 hold disks 10, 20 in place, and conventional spacers such as spacer 19 may be used to achieve the proper clearances. Spacer 19 abuts box frame 1 and pulley 5. Legs 2[0]7 support frame 1. Note that belt 21 is crossed in order to counter-rotate disks 10, 20 upon operation of hand crank 4.--